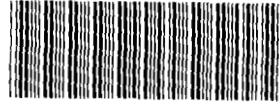




Rocky Mountain
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... protecting the environment

46106



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MEMORANDUM

DATE: August 21, 1995 5400.1

TO: C. D. Cowdery, Environmental Restoration, Bldg. 080, X6953

FROM: *M. B. Murdock*
M. B. Murdock, Ecology, Bldg. T130B, X3560

SUBJECT: EVALUATION OF ECOLOGICAL CONCERNS FOR THREE MIXED WASTE CELL
ALTERNATE LOCATIONS - MBM - 073 - 95

Ecology personnel have reviewed the three proposed alternate locations for placement of the Mixed Waste Cell. Attached are summaries identifying and discussing ecological concerns for each of the options. These attachments address the ecological concerns in a manner similar to, but more condensed than, a normal NEPA document would. We hope this addresses the detail level of your current need.

Please feel free to address further questions on ecological concerns for this project to Jeff Krause at extension 3363, or to me at extension 3560 .

MBM:mbm

Attachment:
As Stated

cc:
C. S. Evans
M. M. Fink
J. D. Haines
J. D. Krause
J. K. Nelson
T. R. Ryon
File
ERPD Records File (2)

SEP 1995
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ADMIN RECORD

BZ-A-000329

1/10

Attachment 1 (9 pages)
C. D. Cowdery
August 21, 1995

NEPA VALUES NORMALLY EXAMINED PRIOR TO A PROJECT - ECOLOGICAL CONCERNS FOR MIXED WASTE CELL LOCATION OPTIONS

Proposed Site # 1: Cell 4 of New Landfill

Direct Effects

The ecological effects of construction of the New Landfill were evaluated in the Environmental Assessment for that project (Environmental Assessment, New Sanitary Landfill at Rocky Flats Plant, January 1994). Effects of construction of the Mixed Waste Cell at that location are expected to be no greater than those from the New Landfill. Assumptions include: footprint remains the same size, no leachate reaching the groundwater, no erosion into wetlands to the north of the construction site.

Construction of the Mixed Waste Cell within the boundaries of the New Landfill area will increase the net surface disturbance beyond that which was planned during the original phased construction. This will result in a greater area of grassland habitat being withdrawn from wildlife at any given time than originally projected. The total habitat destroyed by this construction will remain the same.

Vegetation at Site #1 consists of mid- and Tall-grass Prairie classified as Xeric Mixed Grassland and Mesic Mixed Grassland, depending upon the plant species present. The Tall-grass Prairie component of this area has become of increasing interest to local habitat conservation groups because undisturbed relic Tall-grass Prairie habitat has become rare through disturbance, grazing, and development. In recent years, these habitat conservation groups have become interested in conserving the remaining relic tall-grass prairie at RFETS and adjacent properties.

Numerous wildlife species inhabit the Mesic Mixed Grassland and Xeric Mixed Grassland of the proposed site. Commonly observed species include Mule Deer, Coyotes, approximately 20 species of songbirds, 12 species of raptors, several small mammals, Desert Cottontails, Jackrabbits, several species of reptiles, and a variety of arthropods. Several wildlife species are species of concern due to protected status in the State, or under Federal laws.

Protected Species

Species protected under the Endangered Species Act include threatened and endangered species. Penalties for destruction and harassment of such species include civil and criminal punishment. Two endangered species are known to use RFETS, and impacts to these species must be considered in planning for activities at the Site. Peregrine Falcons (*Falco peregrinus*) and Bald

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Eagles (*Haliaeetus leucocephalus*) both use RFETS casually as foraging habitat. Peregrine Falcons nest in the nearby Flatirons, and Bald Eagles winter in the vicinity. Construction and operation of the Mixed Waste Cell will withdraw some foraging habitat from both species. Operation is not expected to affect these species since once the disturbance occurs, little to no prey will occur within the boundaries of the Cell. Ongoing construction of the New Landfill has effectively already withdrawn the area from use of these species. Individuals of both species are expected to avoid the area due to the lack of foraging opportunity and heavy equipment operation.

Candidate species for listing on the Federal list of "Endangered and Threatened Wildlife and Plants" do not have protected status, but may in the future. Candidate species known to occur in the area of Site #1 include the Northern Goshawk (*Accipiter gentilis*), Ferruginous Hawk (*Buteo regalis*), and the Eastern Short-horned Lizard (*Phrynosoma douglasii brevirostra*). The hawks are winter visitors, and as extremely mobile species will remain relatively unaffected by construction and operation of the Cell at this location. Any lizards occupying the site will be trampled and destroyed by construction activities due to their limited mobility. Due to the preexisting large disturbance in this area, however, most of the lizards that would be impacted are likely already extirpated from the vicinity.

Colorado Species of Special Concern that have been observed at Site #1 include Cooper's Hawk (*Accipiter cooperii*), Golden Eagle (*Aquila chrysaetos*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Harrier (*Circus cyaneus*), and Prairie Falcon (*Falco mexicanus*). The hawks and eagle use the general vicinity as a portion of their larger foraging areas, but do not nest in the near vicinity. Grasshopper Sparrows use Xeric and Mesic mixed Grasslands areas almost exclusively as nesting and foraging areas. Site #1 will have the smallest net effect, compared to the other options, on this species since most of their habitat that will be destroyed through the construction activity has already been destroyed.

No wetlands exist at the construction site, however, seep wetlands fed by groundwater that passes under the site could be affected if groundwater is impacted. With proper erosion controls in place, these nearby wetlands should not be affected by construction or operation.

Indirect Effects

Palustrine Emergent wetlands, Palustrine Scrub-Shrub wetlands, and Upper Church Ditch are down-gradient of the proposed site.

Prevailing northwest winds and an existing noxious weed problem extant in the area may worsen due to additional disturbance in the area.

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Site #2 OU2 East Spray Field

The proposed alternate site located in the OU2 East Spray Field is located in two blocks, Northern and Southern, on opposite sides of the East Access Road. This site poses a more difficult scenario to evaluate due to the division of the cell into two probable units. Options for this site include relocation of the access road to allow construction of a single cell. This would increase the total footprint of the project at this location, and further evaluation would be necessary after the new route for the access road was developed. Ecologically, the two blocks are dissimilar, and must be evaluated separately.

If the storage facility for Site #2 is developed as two separate cells, the footprint is expected to be the largest of the available options. To achieve the same storage capacity, the area for two extra berms (to complete the fourth side of each cell) must be added into the total disturbance. Additionally, the disturbance for haul roads, staging areas, ancillary building pads, etc. would presumably double.

Site #2 Northern Block

Direct Effects

Vegetation at Site #2 North consists of Rehabilitation Mixed Grassland to the west and Xeric Mixed Grassland to the northeast. The Needle-and-Thread grass (*Stipa comata*) dominated plant community of the Xeric Mixed Grassland at this location has become of increasing interest to local habitat conservation groups because this plant community become rare through disturbance, grazing, and development.

Numerous wildlife species inhabit the Mesic Mixed Grassland and Xeric Mixed Grassland of the proposed site. Commonly observed species include Mule Deer, Coyotes, approximately 20 species of songbirds, 12 species of raptors, several small mammals, Desert Cottontails, Jackrabbits, several species of reptiles, and a variety of arthropods. Several wildlife species are species of concern due to protected status in the State, or under Federal laws.

Protected Species

Species protected under the Endangered Species Act include threatened and endangered species. Penalties for destruction and harassment of such species include civil and criminal punishment. Two endangered species are known to use RFETS, and impacts to these species must be considered in planning for activities at the Site. Peregrine Falcons (*Falco peregrinus*) and Bald Eagles (*Haliaeetus leucocephalus*) both use RFETS casually as foraging habitat. Peregrine Falcons nest in the nearby Flatirons, and Bald Eagles winter in the vicinity. Construction and

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operation of the Mixed Waste Cell will withdraw foraging habitat from both species. This is currently an undisturbed area, so new construction here can be expected to have some effect on Bald Eagle flight patterns. The proposed Site #2 is within the normal flight path area of Bald Eagles traveling from the Eldorado Canyon Roost to the Standley Lake foraging area. Operation is not expected to affect these species since once the disturbance occurs, little to no prey will occur within the boundaries of the Cell. Individuals of both species are expected to avoid the area due to the lack of foraging opportunity.

Candidate species for listing on the Federal list of "Endangered and Threatened Wildlife and Plants" do not have protected status, but may in the future. Candidate species known to occur in the area of Site #2 North include the Western Burrowing Owl (*Athene cunicularia hypugea*), Ferruginous Hawk (*Buteo regalis*), and the Eastern Short-horned Lizard (*Phrynosoma douglasii brevirostra*). The Ferruginous Hawk is a winter visitor which forages at the Black-tailed Prairie Dog (*Cynomys ludovicianus*) colony within the Northern Block. This species would be impacted somewhat by withdrawal of a foraging area. This could have greater cumulative impact on this species and other raptors due to destruction of a large portion of the extended colony surrounding RFETS by increasing development in the vicinity. Any lizards occupying the site will be trampled and destroyed by construction activities due to their limited mobility.

If the disturbance of construction of Northern Block were to extend far enough to the northeast, some Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) possible habitat could be effected. A small seep-wetland area exists just to the northeast of the northern extent of the proposed Northern Block. The impact would have to be further evaluated after final design.

Colorado Species of Special Concern that have been observed at Site #1 include Golden Eagle (*Aquila chrysaetos*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Harrier (*Circus cyaneus*), and Prairie Falcon (*Falco mexicanus*). The hawks and eagle use the general vicinity as a portion of their larger foraging areas, but do not nest in the near vicinity. Grasshopper Sparrows use Xeric and Mesic mixed Grasslands areas almost exclusively as nesting and foraging areas. The entire footprint of the construction area at Site #2 represents the total area of foraging and nesting habitat for this species that will be permanently destroyed.

Indirect Effects

Palustrine Emergent wetlands down-gradient of the site (to the north and north-east) may be impacted if the water balance is affected, or if leachate escapes the cell liner.

Site #2 Southern Block

Direct Effects

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Vegetation at Site #2 South consists of Rehabilitation Mixed Grassland. This is a grassland habitat of lower ecological value than the native grassland communities.

Numerous wildlife species inhabit the Rehabilitation Grassland of the proposed site. Commonly observed species include Mule Deer, Coyotes, approximately 15 species of songbirds, 12 species of raptors, several small mammals, Desert Cottontails, several species of reptiles, and a variety of arthropods. Several wildlife species are species of concern due to protected status in the State, or under Federal laws.

Protected Species

Species protected under the Endangered Species Act include threatened and endangered species. Penalties for destruction and harassment of such species include civil and criminal punishment. Two endangered species are known to use RFETS, and impacts to these species must be considered in planning for activities at the Site. Peregrine Falcons (*Falco peregrinus*) and Bald Eagles (*Haliaeetus leucocephalus*) both use RFETS casually as foraging habitat. Peregrine Falcons nest in the nearby Flatirons, and Bald Eagles winter in the vicinity. Construction and operation of the Mixed Waste Cell will withdraw foraging habitat from both species. This is currently an undisturbed area, so new construction here can be expected to have some effect on Bald Eagle flight patterns. The proposed Site #2 is within the normal flight path area of Bald Eagles traveling from the Eldorado Canyon Roost to the Standley Lake foraging area. Operation is not expected to affect these species since once the disturbance occurs, little to no prey will occur within the boundaries of the Cell. Individuals of both species are expected to avoid the area due to the lack of foraging opportunity.

Candidate species for listing on the Federal list of "Endangered and Threatened Wildlife and Plants" do not have protected status, but may in the future. Candidate species known to occur in the area of Site #2 North include the Ferruginous Hawk (*Buteo regalis*), and the Eastern Short-horned Lizard (*Phrynosoma douglasii brevirostra*). The Ferruginous Hawk is a winter visitor which forages at the Black-tailed Prairie Dog (*Cynomys ludovicianus*) colony within the Northern Block, and likely forages on the Desert Cottontails common in the Southern Block. This species would be impacted somewhat by withdrawal of a foraging area. This could have greater cumulative impact on this species and other raptors due to destruction of a large portion of the extended colony surrounding RFETS by increasing development in the vicinity. Any lizards occupying the site will be trampled and destroyed by construction activities due to their limited mobility.

Colorado Species of Special Concern that have been observed at Site #1 include Golden Eagle (*Aquila chrysaetos*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Harrier (*Circus cyaneus*), and Prairie Falcon (*Falco mexicanus*). The hawks and eagle use the general

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vicinity as a portion of their larger foraging areas, but do not nest in the near vicinity. Grasshopper Sparrows use Xeric and Mesic mixed Grasslands areas almost exclusively as nesting and foraging areas. The entire footprint of the construction area at Site #2 represents the total area of foraging and nesting habitat for this species that will be permanently destroyed.

Indirect Effects

Woman Creek, the South Interceptor Ditch, and Pond C-2 are down-gradient from the proposed site and could be affected by runoff, sedimentation, or leachate from the Cell.

Proposed Site #3: OU11 West Spray Field

Direct Effects

Vegetation at Site #3 consists largely of mid- and Tall-grass Prairie classified as Mesic Mixed Grassland with a Xeric Mixed Grassland component, depending upon the plant species present. The Tall-grass Prairie component of this area has become of increasing interest to local habitat conservation groups because undisturbed relic Tall-grass Prairie habitat has become rare through disturbance, grazing, and development. In recent years, these habitat conservation groups have become interested in conserving the remaining relic tall-grass prairie at RFETS and adjacent properties.

Numerous wildlife species inhabit the Mesic Mixed Grassland and Xeric Mixed Grassland of the proposed site. Commonly observed species include Mule Deer, Coyotes, approximately 20 species of songbirds, 12 species of raptors, several small mammals, Desert Cottontails, Jackrabbits, several species of reptiles, and a variety of arthropods. Several wildlife species are species of concern due to protected status in the State, or under Federal laws.

Protected Species

Species protected under the Endangered Species Act include threatened and endangered species. Penalties for destruction and harassment of such species include civil and criminal punishment. Two endangered species are known to use RFETS, and impacts to these species must be considered in planning for activities at the Site. Peregrine Falcons (*Falco peregrinus*) and Bald Eagles (*Haliaeetus leucocephalus*) both use RFETS casually as foraging habitat. Peregrine Falcons nest in the nearby Flatirons, and Bald Eagles winter in the vicinity. Construction and operation of the Mixed Waste Cell will withdraw some foraging habitat from both species. Operation is not expected to affect these species since once the disturbance occurs, little to no prey will occur within the boundaries of the Cell. Ongoing construction of the New Landfill has effectively already withdrawn the area from use of these species. Individuals of both species are

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expected to avoid the area due to the lack of foraging opportunity and heavy equipment operation.

Candidate species for listing on the Federal list of "Endangered and Threatened Wildlife and Plants" do not have protected status, but may in the future. Candidate species known to occur in the area of Site #3 include the Loggerhead Shrike (*Lanius ludovicianus*), Northern Goshawk (*Accipiter gentilis*), and Ferruginous Hawk (*Buteo regalis*). The Loggerhead Shrike is a rare year-round resident at the proposed work site, and may nest in the vicinity. Construction at this site will withdraw foraging habit from the Loggerhead Shrike, and may damage nesting territory as well. The hawks are winter visitors, and as extremely mobile species will remain relatively unaffected by construction and operation of the Cell at this location.

Colorado Species of Special Concern that have been observed at Site #1 include Cooper's Hawk (*Accipiter cooperii*), Sharp-shinned Hawk (*Accipiter striatus*), Golden Eagle (*Aquila chrysaetos*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Harrier (*Circus cyaneus*), and Prairie Falcon (*Falco mexicanus*). The hawks and eagle use the general vicinity as a portion of their larger foraging areas, but do not nest in the near vicinity. Grasshopper Sparrows use Xeric and Mesic mixed Grasslands areas almost exclusively as nesting and foraging areas. The entire footprint of the construction area at Site #2 represents the amount of foraging and nesting habitat for this species that will be permanently destroyed.

No wetlands exist at the construction site.

Indirect Effects

Palustrine Emergent wetlands, Palustrine Scrub-Shrub wetlands of Upper Walnut Creek, and Upper Church Ditch are down-gradient of the proposed site and may be affected by sedimentation.

Prevailing northwest winds and an existing noxious weed problem extant in the area may worsen due to additional disturbance in the area.

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SUMMARY OF ECOLOGICAL CONCERNS FOR MIXED WASTE CELL LOCATION OPTIONS

Information for inclusion into a table similar to Table 9-4, Summary of Potential Impacts, Preferred IM/IRA Versus No Action sample sent to us from OU7 Draft Phase I IM/IRA Decision Document:

Site # 1: New Landfill Location - Cell No. 4

Ecology

Relic Tall-grass Prairie will be destroyed. Replacement of this rare plant community cannot be assured due to changes in the soil through construction activities.

Threatened and endangered species that may be minimally impacted include the Bald Eagle and Peregrine Falcon. Federal candidate species that may be affected include Northern Goshawk, Ferruginous Hawk, and Eastern Short-horned Lizard. The Lizard will be extirpated throughout the work area. Colorado Species of Special Concern include Cooper's Hawk, Golden Eagle, Northern Harrier, Prairie Falcon, and Grasshopper Sparrow. Grasshopper sparrows will be most heavily impacted through destruction of nesting and foraging habitat.

No wetlands will be directly affected.

Site #2: OU2 East Spray Field - North

A Needle-and-Thread grass community will be destroyed. Replacement of this rare plant community cannot be assured due to changes in the soil through construction activities.

Threatened and endangered species that may be impacted include the Bald Eagle and Peregrine Falcon. Federal candidate species that may be affected include Northern Goshawk, Ferruginous Hawk, Eastern Short-horned Lizard, and Preble's Meadow Jumping Mouse. The Lizard will be extirpated throughout the work area. Colorado Species of Special Concern include Golden Eagle, Northern Harrier, Prairie Falcon, and Grasshopper Sparrow. Grasshopper sparrows will be most heavily impacted through destruction of nesting and foraging habitat.

No wetlands will be directly affected.

Site #2: OU2 East Spray Field - South

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Threatened and endangered species that may be impacted include the Bald Eagle and Peregrine Falcon. Federal candidate species that may be affected include Northern Goshawk, Ferruginous Hawk, and Eastern Short-horned Lizard. The Lizard will be extirpated throughout the work area. Colorado Species of Special Concern include Golden Eagle, Northern Harrier, Prairie Falcon, and Grasshopper Sparrow. Grasshopper sparrows will be most heavily impacted through destruction of nesting and foraging habitat.

No wetlands will be directly affected.

Site #2: OU11 West Spray Field

Relic Tall-grass Prairie will be destroyed. Replacement of this rare plant community cannot be assured due to changes in the soil through construction activities.

Threatened and endangered species that may be impacted include the Bald Eagle and Peregrine Falcon. Federal candidate species that may be affected include Northern Goshawk, Ferruginous Hawk, Loggerhead Shrike, and Eastern Short-horned Lizard. The Lizard will be extirpated throughout the work area. Colorado Species of Special Concern include Cooper's Hawk, Sharp-shinned Hawk, Golden Eagle, Northern Harrier, Prairie Falcon, and Grasshopper Sparrow. Grasshopper sparrows will be most heavily impacted through destruction of nesting and foraging habitat.

No wetlands will be directly affected.